

REMARKS

Claim 9 is amended to correct antecedent basis errors and is not amended in response to the claim's rejection under 35 U.S.C. 103(a).

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,775,392 (RHOADS) in view of U.S. Patent 5,892,900 (GINTER). The Examiner is respectfully requested to withdraw the rejection of these claims in view of the following comments distinguishing them over the combination of RHOADS and GINTER.

Claim 1

Claim 1 recites including software in a server that embeds a license stamp in a data file when the server sends the data file to a destination computer via a network, wherein the license stamp indicates that the data file was forwarded by licensed server software. Claim 1 also recites adapting processing software executed by the destination computer so that it processes the data file only when the received data file contains the embedded license stamp.

Although RHOADS teaches to embed an identification code in a signal, the Examiner correctly observes that RHOADS does not teach to adapt processing software executed in a destination computer to process the signal only when the received signal contains an embedded license stamp as recited in claim 1. However, the Examiner indicates GINTER, col. 109, line 40-55 (reproduced below for convenience) teaches adapting processing software executed by the destination computer so that it processes a data file only when the received data file contains an embedded license stamp indicating that the data file was forwarded by licensed server software.

"In addition, file system 687 may be a network file system (e.g., Netware, LANTastic, NFS, etc.) that allows access to VDE objects using redirecter 684. Object switch 734 also supports this capability.

If External Services Manager 772 is used to access VDE objects, many different techniques are possible. For example, the VDE objects may be formatted for use with the World Wide Web protocols (HTML, HTTP, and URL) by including relevant headers, content tags, host ID to URL conversion (e.g., using Name Services Manager 752) and an HTTP-aware instance of Services Transport Layer 786.

In other examples, External Services Manager 772 may be used to locate, connect to, and utilize remote event processing services; smart agent execution services (both to provide these services and locate them); certification services for Public Keys; remote Name Services; and other remote functions either supported by ROS 602 RPCs (e.g., have RSIs), or using protocols supported by Services Transport Layer 786."

The first sentence of the quoted section of GINTER teaches that a file system allows user access to virtual distribution environment (VDE) objects (such as data files) using a "redirection." GINTER tells us that the "redirection 684" allows such "non-VDE aware...applications 608(b) to access VDE objects 300 and functions 604." Thus this sentence discusses a mechanism in a server that allows a receiving computer that does not have ability to access a data file on a remote server using the appropriate VDE procedure to nonetheless access that data file. This sentence does not teach or suggest that processing software in a destination computer that will process a data file only if a license stamp is embedded in the file indicating that the data file was forwarded by a licensed server, as recited in claim 1.

The second sentence of the quoted section of GINTER teaches the VCE objects (files) can be in any of several formats such as HTML, HTTP etc. and that the formats can include headers, tags and other information. However this sentence does not teach or suggest that one of the things included in a VDE object can or should include is an embedded license stamp indicating it is from licensed server software, and does not teach or suggest that processing software in a destination computer should be designed to process a data file only if a license stamp is embedded in the file indicating that the data file was forwarded by a licensed server, as recited in claim 1.

The third sentence of the quote teaches that an "external services manager" in a server computer can locate, connect to and use various remote services. This sentence does not teach or suggest that processing software in a destination computer that will process a data file only if a license stamp is embedded in the file indicating that it was forwarded by a licensed server, as recited in claim 1. Thus the cited section of GINTER does not teach the limitation of claim 1 of adapting processing software executed in a destination computer to process the signal only when the received signal contains an embedded license stamp.

The quoted section of GINTER is discussed in detail above because the Examiner quoted this section of GINTER as being representative of GINTER's teachings. Pursuant to the Examiner's request of paragraph 39 of the office action, the applicant has also considered GINTER and RHOADS in their entirety and has found nothing in either GINTER or RHOADS, or any obvious combination thereof, that teaches or suggests the limitation recited in claim 1 of adapting processing software executed in a destination computer to process the signal only when the received signal contains an embedded license stamp. Likewise, although the applicant discusses in detail below other sections of prior art when the Examiner has cited those sections as being representative of the teaching of the prior, the applicant's comments below are based on a consideration of the cited prior art in its entirety with respect to each claim and include comments on any teaching considered particularly relevant to any claim regardless of whether such teachings are specifically cited by the Examiner.

Claim 2

Claim 2 is patentable over the combination of GINTER and RHOADS for reasons set forth above in connection with its parent claim 1. Claim 2 further recites that the embedded license stamp identifies the source computer of the data file. The Examiner cites the following section of RHOADS (col. 17, lines 5-20) as disclosing this limitation:

"The details of implementing the creation of the amplitude map have a variety of choices. One is to perform the same procedure which is used to determine the signal amplitude as described above, only now we step and repeat the multiplication of any given area of the signal/image with a gaussian weight function centered about the area we are investigating.

Universal Versus Custom Codes

The disclosure thus far has outlined how each and every source signal has its own unique set of individual embedded code signals. This entails the storage of a significant amount of additional code information above and beyond the original, and many applications may merit some form of economizing.

One such approach to economizing is to have a given set of individual embedded code signals be common to a batch of source materials."

In RHOADS' terminology, a data file is sent from one computer to another by a signal, which RHODES calls a "source signal." When codes are embedded in the data file, they appear as "embedded code signals" within the source signal when the file is sent from one computer to another.

The first two sentences of the cited section of RHOADS relate to how a code signal (i.e. an embedded code) appears in a source signal (i.e. a file), and not to what the code means or what it may cause a receiver to do or not do. However the next paragraph of the cited section (following the header "Universal Versus Custom Codes" does suggest one thing an embedded code can mean. RHOADS states that "each and every source signal has its own unique set of embedded code signals." In other words, RHOADS is telling us that every file can have its own unique embedded code, and in such case, the code embedded in the file uniquely identifies the file itself. However claim 2 recites that the code identifies the computer that transmitted the file, not the file itself.

The last sentence of the cited section of RHOADS teaches that the same code can be embedded in all of the files of a common batch. Thus RHOADS teaches that a code can identify a file as being a member of a particular group of files, but does not teach that a code embedded in a file should be used to identify a source computer that transmitted that particular file. Identifying a computer that sends a document, and identifying the document itself, are two different activities. The cited section of RHOADS, as well as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claim 2.

Claim 3

Claim 3 depends on claim 1 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 3 further recites that the file is a print file suitable for causing a printer to print a document. The Examiner cites RHOADS col. 17, lines 5-20 as teaching that a file containing an embedded code is a print file. This section of RHOADS is repeated below:

"The details of implementing the creation of the amplitude map have a variety of choices. One is to perform the same procedure which is used to

determine the signal amplitude as described above, only now we step and repeat the multiplication of any given area of the signal/image with a Gaussian weight function centered about the area we are investigating.

Universal Versus Custom Codes

The disclosure thus far has outlined how each and every source signal has its own unique set of individual embedded code signals. This entails the storage of a significant amount of additional code information above and beyond the original, and many applications may merit some form of economizing.

One such approach to economizing is to have a given set of individual embedded code signals be common to a batch of source materials."

Note that nothing in this section of RHOADS mentions anything about a print file having an embedded license code indicating that the print file was forwarded by licensed server software. RHOADS col. 53, line 65 through col. 54, line 45 mentions printing pixels on a page wherein the color of each pixel is controlled by separate bytes in a data file. That section of RHOADS teaches to embed a code in such a file by modifying a group of pixels to modulate their intensity in some way. However that section of RHOADS does not suggest that the code indicates that the print file was forwarded by licensed server software as recited in claim 3.

Claim 4.

Claim 4 depends on claim 3 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 4 further recites that the license stamp is embedded in the print file in a way that the printer can ignore it when printing. The Examiner cites RHOADS col. 40, lines 50 through col. 41, line 10 as teaching this. The cited section of RHOADS is reproduced below.

"More Details on Embedding Signature Codes into Motion Pictures

Just as there is a distinction made between the JPEG standards for compressing still images and the MPEG standards for compressed motion images, so too should there be distinctions made between placing invisible signatures into still images and placing signatures into motion images. As with the JPEG/MPEG distinction, it is not a matter of different foundations, it is the fact that with motion images a new dimension of

engineering optimization opens up by the inclusion of time as a parameter. Any textbook dealing with MPEG will surely contain a section on how MPEG is (generally) not merely applying JPEG on a frame by frame basis. It will be the same with the application of the principles of this technology: generally speaking, the placement of invisible signatures into motion image sequences will not be simply independently placing invisible signatures into one frame after the next. A variety of time-based considerations come into play, some dealing with the psychophysics of motion image perception, others driven by simple cost engineering considerations.

One embodiment actually uses the MPEG compression standard as a piece of a solution. Other motion image compression schemes could equally well be used, be they already invented or yet to be invented. This example also utilizes the scrambled logo image approach to generating the master snowy image as depicted in FIG. 13 and discussed in the disclosure."

While, this section of RHOADS talks about JPEG and MPEG files, it mentions nothing about print files as recited in claim 4, or about inserting a code into a file in a way that allows a program that processes the file to ignore it as recited in claim 4. This section of RHOADS teaches that a "signature" code can be added to a JPEG or MPEG video file, but a JPEG or MPEG viewer does not ignore a signature code as recited in claim 4; the code actually affects the displayed video, although as RHOADS explains, the signature is essentially "invisible" in the sense that it alters the displayed video file so little that it is not easily noticed by a viewer.

RHOADS col. 53, line 65 through col. 54, line 45 (not cited by the Examiner relative to claim 4) mentions printing pixels on a page wherein the color of each pixels is controlled by separate bytes in a data file. That section of RHOADS teaches to embed a code in such a file by modifying a group of pixels to modulate their intensity in some way. Thus a printer would not ignore the code because the page alters pixels of the printed document, though not by much.

Claim 5

Claim 5 depends on claim 3 and is patentable over RHOADS for similar reasons. Claim 5 further recites that the action carried out by the destination computer (which is inhibited if the license code does not appear in the print file) comprises displaying an image of the document defined by the print file. The Examiner points to RHOADS col. 40, lines 50 through col. 41, line 10 (reproduced above in

connection with claim 4) as teaching that a computer displays a document defined by a print file.

While the cited section of RHOADS talks about JPEG and MPEG files, it mentions nothing about print files, about embedding a license code in a print file indicating that the file was generated by a licensed source, about software that can display an image of a document described by a print file, or about configuring such software to refrain from displaying such image when the print file does not contain the license code, all of which are limitations of claim 5. Thus the quoted section of RHOADS fails to disclose or suggest the additional limitations of claim 5.

RHOADS col. 53, line 65 through col. 54, line 45 (not cited by the Examiner relative to claim 5) mentions printing pixels on a page wherein the color of each pixel is controlled by separate bytes in a data file. That section of RHOADS teaches to embed a code in such a file by modifying a group of pixels to modulate their intensity in some way, but it does not teach to configure software that displays an image described by a file to refrain from displaying such image when the file does not contain the license code recited in claim 5.

Claim 6

Claim 6 depends on claim 3 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 6 further recites that the action carried out by the processing software (which is inhibited if the license code does not appear in the print file) is causing a printer to print the document described by the print file. The Examiner cites RHOADS col. 43, lines 30-65 (reproduced below) as teaching the additional limitations of claim 6.

"The concept of the "header" on a digital image or audio file is a well established practice in the art. The top of FIG. 16 has a simplified look at the concept of the header, wherein a data file begins with generally a comprehensive set of information about the file as a whole, often including information about who the author or copyright holder of the data is, if there is a copyright holder at all. This header 800 is then typically followed by the data itself 802, such as an audio stream, a digital image, a video stream, or compressed versions of any of these items. This is all exceedingly known and common in the industry.

One way in which the principles of this technology can be employed in the service of information integrity is generically depicted in the lower diagram of FIG. 16. In general, the N-bit identification word can be used to essentially "wallpaper" a given simple message throughout an image (as depicted) or audio data stream, thereby reinforcing some message already contained in a traditional header. This is referred to as "header verification" in the title of this section. The thinking here is that less sophisticated would-be pirates and abusers can alter the information content of header information, and the more secure techniques of this technology can thus be used as checks on the veracity of header information. Provided that the code message, such as "joe's image" in the header, matches the repeated message throughout an image, then a user obtaining the image can have some higher degree of confidence that no alteration of the header has taken place.

Likewise, the header can actually carry the N-bit identification word so that the fact that a given data set has been coded via the methods of this technology can be highlighted and the verification code built right into the header. Naturally, this data file format has not been created yet since the principles of this technology are currently not being employed."

The cited section of RHOADS teaches image and audio files include headers containing various types of information, and teaches that some of the header information can be repeated in the form of embedded codes. However the cited section of RHOADS, mentions nothing inserting a license code into a print file or any other kind of file indicating that the file was generated by a licensed source, or about configuring software that can cause a printer to print a document described by a print file to refrain from doing so when the print file does not contain the license code, all of which are limitations of claim 6. The cited section of RHOADS, as well as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claim 6.

Claims 7 and 8

Claims 7 and 8 depend on claim 1 and are patentable over the combination of RHOADS and GINTER for similar reasons. Claim 7 further recites that the action carried out by the processing software (which is inhibited if the license code does not appear in the file) is initiating a sound. Claim 8 further recites that the action carried out by the processing software (which is inhibited if the license code does not appear in the file) is displaying a video image defined by

the file. The Examiner cites RHOADS col. 52, line 65 through col. 53, line 60 (reproduced below) as teaching the additional limitations of claims 7 and 8.

"It is as well known as it is regretted that there exist a plethora of file format standards (and not-so-standards) for digital images, digital audio, and digital video. These standards have generally been formed within specific industries and applications, and as the usage and exchange of creative digital material proliferated, the various file formats slugged it out in cross-disciplinary arenas, where today we find a de facto histogram of devotees and users of the various favorite formats. The JPEG, MPEG standards for formatting and compression are only slight exceptions it would seem, where some concerted cross-industry collaboration came into play.

The cry for a simple universal standard file format for audio/visual data is as old as the hills. The cry for the protection of such material is older still. With all due respect to the innate difficulties attendant upon the creation of a universal format, and with all due respect to the pretentiousness of outlining such a plan within a patent disclosure, the inventor does believe that these methods can serve perhaps as well as anything for being the foundation upon which an accepted world-wide "universal commercial copyright" format is built. Practitioners know that such animals are not built by proclamation, but through the efficient meeting of broad needs, tenacity, and luck. More germane to the purposes of this disclosure is the fact that the application of this technology would benefit if it could become a central piece within an industry standard file format. The use of universal codes in particular could be specified within such a standard. The fullest expression of the commercial usage of this technology comes from the knowledge that the invisible signing is taking place and the confidence that instills in copyright holders.

The following is a list of reasons that the principles of this technology could serve as the catalyst for such a standard: (1) Few if any technical developments have so isolated and so pointedly addressed the issue of broad-brush protection of empirical data and audio/visual material; (2) All previous file formats have treated the information about the data, and the data itself, as two separate and physically distinct entities, whereas the methods of this technology can combine the two into one physical entity; (3) The mass scale application of the principles of this technology will require substantial standardization work in the first place, including integration with the years-to-come improvements in compression technologies, so the standards infrastructure will exist by default; (4) the growth of multimedia has created a generic class of data called "content," which includes text, images, sound, and graphics, arguing for higher and higher levels of "content standards"; and (5) marrying copyright

protection technology and security features directly into a file format standard is long overdue.

Elements of a universal standard would certainly include the mirroring aspects of the header verification methods, where header information is verified by signature codes directly within data. Also, a universal standard would outline how hybrid uses of fully private codes and public codes would commingle. Thus, if the public codes were "stripped" by sophisticated pirates, the private codes would remain intact. A universal standard would specify how invisible signatures would evolve as digital images and audio evolve. Thus, when a given image is created based on several source images, the standard would specify how and when the old signatures would be removed and replaced by new signatures, and if the header would keep track of these evolutions and if the signatures themselves would keep some kind of record."

The cited section of RHOADS laments the fact that there is no universal standard for audio and video files and suggests that if a universal standard is created, then the standard should allow for the inclusion of universally recognized embedded public codes (which are publicly known) and private codes (which are secret). RHOADS also teaches that copy pirates could alter or strip public codes but not private codes. However the cited section of RHOADS, mentions nothing about inserting a license code into an audio (or video) file indicating that the file was generated by a licensed source, or about configuring software that can initiate a sound (or display an image) in response to an audio (or video) file to refrain from initiating the sound (or generating the display) when the file does not contain such a license code, all of which are limitations of claim 7 or claim 8. The cited section of RHOADS, as wells as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claims 7 and 8.

Claim 9

Claim 9 depends on claim 1 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 9 further recites that the license stamping means also process the data file to determine a value of an attribute of the data file and includes in the embedded license stamp an attribute code indicating that value. Claim 9 also recites that the processing software refrains from carrying out

the action unless the value of the attribute of the data file matches the value indicated in the license stamp.

The Examiner cites RHOADS col. col. 52, line 65 through col. 53, line 60 (reproduced above) as teaching this. As discussed above, the cited section of RHOADS laments the fact that there is no universal standard for audio and video files and suggests that if a universal standard is created, then the standard should allow for the inclusion of universally recognized embedded private and public codes. However nothing in the cited section of RHOADS teaches anything about the additional limitations of claim 9, namely that license stamping means in a server should process a data file to determine a value of a data file attribute and include an attribute code indicating in that value in the embedded license stamp, and that the processing software receiving the file should be configured to refrain from carrying out an action with respect to that file unless the attribute value of the data file matches the value indicated in the license stamp. The cited section of RHOADS, as well as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claim 9.

Claim 10

Claim 10 depends on claim 9 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 10 further recites that the data file consists of a plurality of data bytes, each of which influences the value of the attribute. The Examiner cites RHOADS col. 53, line 65 through col. 54, line 45 (reproduced below) as teaching this.

"Most of the disclosure focuses on pixels being the basic carriers of the N-bit identification word. The section discussing the use of a single "master code signal" went so far as to essentially "assign" each and every pixel to a unique bit plane in the N-bit identification word.

For many applications, with one exemplar being that of ink based printing at 300 dots per inch resolution, what was once a pixel in a pristine digital image file becomes effectively a blob (e.g. of dithered ink on a piece of paper). Often the isolated information carrying capacity of the original pixel becomes compromised by neighboring pixels spilling over into the geometrically defined space of the original pixel. Those practiced in

the art will recognize this as simple spatial filtering and various forms of blurring.

In such circumstances it may be more advantageous to assign a certain highly local group of pixels to a unique bit plane in the N-bit identification word, rather than merely a single pixel. The end goal is simply to pre-concentrate more of the signature signal energy into the lower frequencies, realizing that most practical implementations quickly strip or mitigate higher frequencies.

A simple-minded approach would be to assign a 2 by 2 block of pixels all to be modulated with the same ultimate signature grey value, rather than modulating a single assigned pixel. A more fancy approach is depicted in FIGS. 21A and 21B, where an array of pixel groups is depicted. This is a specific example of a large class of configurations. The idea is that now a certain small region of pixels is associated with a given unique bit plane in the N-bit identification word, and that this grouping actually shares pixels between bit planes (though it doesn't necessarily have to share pixels, as in the case of a 2-times-2 block of pixels above).

Depicted in FIGS. 21A and 21B is a 3-times-3 array of pixels with an example normalized weighting (normalized.fwdarw.the weights add up to 1). The methods of this technology now operate on this elementary "bump," as a unit, rather than on a single pixel. It can be seen that in this example there is a fourfold decrease in the number of master code values that need to be stored, due to the spreading out of the signature signal. Applications of this "bump approach" to placing in invisible signatures include any application which will experience a priori known high amounts of blurring, where proper identification is still desired even after this heavy blurring."

A file describing a pixel-based image uses a separate byte to indicate the color of each pixel. The cited section of RHOADS describes embedding a code in a document describing a pixel-based image by modifying the bytes representing a group of pixels to modulate the gray scale of a group of pixels rather than entirely replacing a single pixel byte with a code. This makes the effects of embedding a code in the file less noticeable. However nothing in the cited section of RHOADS teaches anything about the additional limitations of 10, namely that license stamping means in a server should process a data file to determine a value of a data file attribute and include an attribute code indicating in that value in the embedded license stamp, that the attribute code should be influenced by all bytes forming the file, that the processing software

receiving the file should be configured to refrain from carrying out an action with respect to that file unless the attribute value of the data file matches the value indicated in the license stamp. RHOADS teaches modifying the values of a set of pixel bytes so that in addition to representing a pixel colors, they also collectively represent a code. This is not what claim 10 recites, which is to generate attribute value that is influenced by the value of every pixel byte as well as every other byte in the file, and then embed that value in the license stamp.

The cited section of RHOADS, as well as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claim 10.

Claim 11

Claim 11 depends on claim 1 and is patentable over the combination of GINTER and RHOADS for similar reasons.

Claims 12-22

Claims 12-22 are patentable over the combination of RHOADS and GINTER for reasons similar to those expressed above in connection with claims 1-11, respectively.

Claims 23-25

Claims 23, 24, and 25 are patentable over the combination of RHOADS and GINTER for reasons generally similar to those expressed above in connection with claims 1, 3, and 4, respectively.

Claim 26

Claim 26 depends on claim 23 and is patentable over the combination of RHOADS and GINTER for similar reasons. Claim 26 further recites that the embedded license includes a code identifying a licensee.

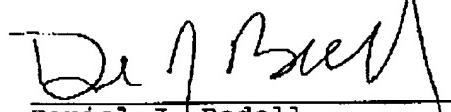
The Examiner points to RHOADS col. 53, line 65 through col. 54, line 45 (reproduced above) as teaching this. A file describing a pixel-based image uses a separate byte to indicate the color of each pixel. The cited section of RHOADS describes embedding a code in a document describing a pixel-based image by modifying the bytes representing a group of pixels to modulate the gray scale of a group

of pixels rather than entirely replacing a single pixel byte with a code. This makes the effects of embedding a code in the file less noticeable. However nothing in the cited section of RHOADS teaches anything about the additional limitations of 10, namely that license stamping means in a server should process a data file to determine a value of a data file attribute and include an attribute code indicating in that value in the embedded license stamp, that the attribute code should be influenced by all bytes forming the file, that the processing software receiving the file should be configured to refrain from carrying out an action with respect to that file unless the attribute value of the data file matches the value indicated in the license stamp. RHOADS teaches modifying the values of a set of pixel bytes so that in addition to representing a pixel colors, they also collectively represent a code. None of this is particularly relevant to claim 26 which relates to embedding a code in a file identifying a licensee. The cited section of RHOADS, as well as the combination of RHOADS and GINTER in its entirety, fail to disclose or suggest the additional limitations of claim 26.

The prior art made of record and not relied upon, but considered pertinent to the applicant's disclosure has been reviewed and does not appear to teach or suggest the applicant's invention as recited in the claims.

In view of the foregoing amendments and remarks, it is believed the application is in condition for allowance. Notice of Allowance is therefore respectfully requested.

Respectfully submitted,



Daniel J. Bedell
Reg. No. 30,156

SMITH-HILL & BEDELL, P.C.
16100 N.W. Cornell Road, Suite 220
Beaverton, Oregon 97006

Tel. (503) 574-3100
Fax (503) 574-3197
Docket: SWIF 1981

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